Practical Work 05 (Arrays and matrixes)

Objectives: get starting with arrays manipulation using functions and procedures.

Exercise 01

Write a C program that take the class semester points of n students as input then:

1. Compute the average points of the class.
2. Compute the number and the rate of students who get points great than 10.
3. Gives the best and worst points with the student position precision.
4. Add 1 point to each student get a point less than 5.

(using modularity)

Exercise 02

Write a C program that take an array of integer values then put the negatives points at the beginning and the positive points at the ends.

3	-8	11	-20
-8	-20	3	11

Exercise 03

A is a char array of n character, write a C program that compute the occurrence number of a character entered by user, if it's equal to 1 , then replace it by the character who have the most occurrence number.

e.g:

b	C	b	a

for example for a character c the occurrence number is 1 so the array will be:

b	b	b	a

(use function to return the char of the most occurrence, and a procedure to replace it)

Exercise 04

Write a C program that construct a square matrix of n*n size which contains pascal triangle.
e.g: for n=5.

1	0	0	0	0
1	1	0	0	0
1	2	1	0	0
1	3	3	1	0
1	4	6	4	1

Exercise 05

Write a C program that take the user matrix than put the positive numbers at the top of diagonal and negative ones at the bottom of the diagonal, while the null elements present the diagonal.

N.B: we suppose that the number of positive and negative are equal. And null number equal to N (diagonal).

Exercice 06 (XO game)

Write a C program that ask from two users the location (x,y) // x and y in [1, 3] then mark the matrix by X or O according to location. At the end the user who get his character in line is the winner.

Index: use two matrix one contains the characters X and O and the second Boolean to check the location marked or no.